

Assessing Infrastructure Sustainability: The Envision™ System



The Logan International Airport Consolidated Rental Car Facility (ConRAC) achieved the Envision™ Project Rating when it was completed in late 2013. The project's innovative design exemplifies the economic, social and environmental principles of sustainability per Envision.

The building industry has, for over a decade, witnessed the evolution of the market through the use of the Leadership in Energy and Environmental Design (LEED) sustainability framework and assessment method to certify the “greenness” of a building. However, within horizontal infrastructure there has yet to be a comparably influential standard. One promising framework called Envision™ was recently developed by the Institute for Sustainable Infrastructure (ISI) —a joint venture of the American Society of Civil Engineers, the American Public Works Association, and the American Council of Engineering Companies. The system has gained a tremendous amount of support and interest within the infrastructure industry in the past several years.

Envision™ is a publicly available checklist and assessment tool as well as a third-party rating system for project performance. As with all reputable sustainability frameworks, it considers project aspects across environmental, community and economic criteria and from conceptual planning through operations.

Public works departments, water districts, departments of transportation, and other municipal bodies have begun to use the Envision™ criteria to evaluate their suite of projects, and have also encouraged their staff to obtain the professional certification (ENV SP) as a means of saturating an understanding of infrastructure sustainability throughout their organizations. A few have also noted ENVSP as a required skill set within project teams.

The Envision™ tool is comprised of 60 sustainability criteria within five categories: Quality of Life, Leadership, Resource Allocation, Natural World, and Climate and Risk. Projects are scored for each of the criteria based upon how they can demonstrate various levels of achievement, described in detail for each criterion. The tool may be used as a relatively informal checklist, which provides a snapshot in the early phase of a project, or applied more stringently either through a self-assessment (performed by an ENV SP credentialed professional) or by engaging ISI (for a fee) in the use of third-party verifiers who review the assessment. This formal third-party evaluation of the documentation, which allows projects to be recognized at various levels of achievement: platinum, gold, silver, or bronze, is a key differentiator.

The Envision™ system was conceived, in part, as a good governance tool for municipalities to use in working across traditional infrastructure silos to consider how infrastructure projects best work together, synergistically, to enhance communities. Its use as a stand-alone project evaluation is still in the pilot stage. Currently, there are no prerequisites that all projects must achieve. For instance, a water project could achieve an adequate rating without having addressed water quality, ground water protection or other water-specific criteria. While this would likely be noted as a cause for concern by the third-party

verifier, the precise means of correcting this discrepancy is still in development. In addition, projects that are well-planned would score well, even if a contractor or operator fails to deliver adequate resource efficiency or protection. As the framework is used, ISI is incorporating those lessons learned, as well as volunteer work on their committees, to continuously improve and streamline the process and framework.

The system does not yet have a required method for tracking requirements from planning through delivery. In many cases, a cloud-based database system may be an appropriate tool for tracking Envision™ infrastructure projects to completion. Such a system is able to contain all the pertinent details about the proposed infrastructure projects, allow multiple points of user access, monitor the specific Envision™ metrics, and provide record keeping and reporting functionality to demonstrate compliance. Similar systems in use to track environmental compliance requirements are well suited to adaptation for Envision™.

ISI's tool is a very helpful universal framework for assessing any type of infrastructure, and contains an excellent set of best practices, some of them leading edge (such as whole-life embodied energy analysis and consideration for reducing impacts and embodied energy in design) in the US when it comes to infrastructure delivery. It can be very helpful at the planning stages of an infrastructure project, when multi-agency technical advisory teams are at the table and can consider how best to integrate a suite of capital projects to achieve added value for the environment, the economy, and the community.

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